

REMARKS

Reconsideration of the application, as amended, is respectfully requested.

Claim 1 has been amended. Deletion of the "40%" phrase is supported in the second aspect of the invention on page 5, line 29 to page 6, line 17.

The Office has stated that the term "overlap with" is indefinite as sequence overlap is dependent upon the direction of the sequence, and that sequence overlap can refer to the overlap between a peptide sequence in the N→C direction, and a peptide sequence in the reverse C→N direction.

Applicants respectfully traverse this rejection at least for the following reasons:

It is well known that peptide bonds have linear directionality and a protein having a particular sequence in the N→C direction is not the same as a protein having the same sequence in the reverse C→N direction. Furthermore, it is the convention in biochemistry that peptide sequences are listed in the N→C direction, and are always compared in the same direction. This direction has become the convention as it follows the directionality of the genetic code.

A patent is a technical document addressed to a person of skill in the relevant art, and the meaning of a term in a patent claim should not be construed in such a way as to be nonsensical to a person of skill in the relevant art. A comparison between two peptide sequences with identical sequences in opposite orientations would be meaningless. So much so, a person skilled in the art of biochemistry would never even contemplate performing a comparison of two sequences in anything but the same direction.

In this particular case, the antifreeze protein of claim 1 has at least 80% overlap with SEQ ID NO: 1, which is listed in the conventional N→C direction. No biochemist would ever consider comparing this sequence with another peptide sequence in the C→N direction. To suggest otherwise is utterly art-repugnant.

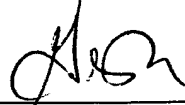
New claim 15 is based on claim 1 as originally filed but the language "which can be derived from" has been changed to "which naturally occurs in." This finds support throughout the specification, especially in the examples where the antifreeze protein of claim 15 was obtained from a plant in which it naturally occurs. Claims 16-18 are based on the claims as originally filed and also are supported in the description and the examples.

In the previous Office Action dated 16 August 2002, the Examiner rejected claim 1 as filed on the grounds that the term "which can be derived from" is indefinite, allowing the antifreeze protein to be derived from a plant or not. The Examiner thus found claim 1 as filed to lack novelty in light of the antifreeze protein from the spruce budworm, described in U.S. Patent No. 6,348,569 which had similar technical features.

The language used in proposed claim 15 is not indefinite. Claim 15 specifies that the protein naturally occurs in a plant. The worm protein described in U.S. Patent No. 6,348,569 does not naturally occur in a plant. The Examiner also noted that U.S. Patent No. 6,348,569 discloses that the worm protein can be made transgenically, for example in a plant. However, even in this case the worm protein can not be said to naturally occur in a plant.

In view of the foregoing, it is respectfully requested that the application, as amended be allowed.

Respectfully submitted,



Gerard J. McGowan, Jr.
Attorney for Applicant(s)
Reg. No. 29,412

GJM/pod
(201) 840-2297